Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A device for detecting airborne conductive or dielectric particles, comprising:

a resonant cavity having a high E field sensing region;

means for feeding power to the cavity;

a suction device for directing an airborne particle through the high E field sensing region of the cavity; ~~and~~

sensing means coupled to the cavity for sensing a drop in E field level caused by the particle and outputting an output signal representative thereof; and

means for displaying a histogram of the effective conductivity of airborne conductive particles comprising:

means for measuring the height of each signal outputted by the sensing means per unit time;

means for counting the number of signals of a given height as a count that is output by the sensing means per unit time;

a memory storage register having an address number proportional to signal height;

means for storing the count in the memory storage register at the respective address number; and

means for displaying the count from each address number of the memory storage register as a function of address number.

2. (Original) The device according to claim 1, wherein said output signal is proportional to the volume concentration of said airborne conductive particles.

3. (Original) The device according to claim 1, further comprising means for measuring the volume concentration of conductive articles comprising:

means for measuring the air volume flow rate through the high E field sensing region of the cavity; and

means for counting the number of signals outputted by the sensing means per unit time.

4. (Previously Presented) The device according to claim 1, further comprising means for measuring the mass flow rate of airborne conductive articles comprising:

means for measuring the volume of air flowing through the high E field sensing region of the cavity per unit time; and

means for measuring the average height of the signals outputted by the sensing means per unit time.

5. (Original) The device according to claim 4, further comprising means for displaying the count of signals outputted by said sensing means.

6-9. (Cancelled)

10. (Currently Amended) An arrangement for detecting the x, y, and z components of airborne conductive particles, comprising:

first and second wave guides having a first cavity and a second cavity, respectively, each with a high E field sensing region, and a third cavity with a high E field sensing region, said three E field sensing regions being orthogonally arranged relative to each other so that x, y, and z sensing fields are provided;

means for feeding power to said three cavities;

means for directing an airborne particle through the high E field sensing region of the cavity of the x sensing field; and

sensing means coupled to each of the three cavities for sensing the drop in E field level caused by the particle and outputting a signal representative thereof.

11. (Currently Amended) An arrangement for detecting the x, y, and z components of airborne conductive particles, comprising:

a resonant cavity with an input port and an opening near said input port and having a high E field sensing region;

means for feeding power to the cavity;

a suction device for directing an airborne particle into said input port of the resonant cavity and through the high E field sensing region of the cavity; ~~and~~

sensing means coupled to the cavity for sensing a drop in E field level caused by the particle and outputting a signal representative thereof; and

means for displaying a histogram of the effective conductivity of airborne conductive particles comprising:

means for measuring the height of each signal outputted by the sensing means per unit time;

means for counting the number of signals of a given height as a count that is output by the sensing means per unit time;

a memory storage register having an address number proportional to signal height;

means for storing the count in the memory storage register at the respective address number; and

means for displaying the count from each address number of the memory storage register as a function of address number.

12. (Currently Amended) A device for detecting airborne conductive or dielectric particles, comprising:

a resonant cavity having ~~dimension wherein its~~ a height ~~is~~ greater than ~~its~~ a width and having a high E field sensing region;

means for feeding power to the cavity;

a suction device for directing an airborne particle through the high E field sensing region of the cavity; ~~and~~

sensing means coupled to the cavity for sensing a drop in E field level caused by the particle and outputting a signal representative thereof; and

means for displaying a histogram of the effective conductivity of airborne conductive particles comprising:

means for measuring the height of each signal outputted by the sensing means per unit time;

means for counting the number of signals of a given height as a count that is output by the sensing means per unit time;

a memory storage register having an address number proportional to signal height;

means for storing the count in the memory storage register at the respective address number; and

means for displaying the count from each address number of the memory storage register as a function of address number.

13. (Original) The device according to claim 12, wherein said cavity has a resonant frequency and wherein said means for feeding power supplies an excitation frequency slightly higher than said resonant frequency.

14. (Currently Amended) A method for detecting airborne conductive or dielectric particles, comprising the steps of:

providing a resonant cavity having a high E field sensing region;

feeding power to the cavity;

directing an airborne particle through the high E field sensing region of the cavity using a suction device; ~~and~~

sensing a drop in E field level caused by the particle and for outputting an output signal representative thereof; and

displaying a histogram of the effective conductivity of airborne conductive particles comprising:

measuring the height of each signal outputted by the sensing means per unit time;

counting the number of signals of a given height outputted by the sensing means per unit time;

providing a memory storage register having an address number proportional to signal height;

storing the count in the memory storage register at the respective address number; and

displaying the count from each address number of the memory storage register as a function of address number.

15. (Original) The method according to claim 14, wherein said cavity has a resonant frequency and wherein said feeding power supplies an excitation frequency slightly higher than the resonant frequency.

16. (Original) The method according to claim 14, wherein said output signal is proportional to the volume concentration of said airborne conductive particles.

17. (Original) The method according to claim 14, further comprising providing means for measuring the volume concentration of conductive particles comprising:

providing means for measuring the air volume flow rate through the high E field sensing region of the cavity; and

providing means for counting the number of signals outputted by the sensing means per unit time.

18. (Previously Presented) The method according to claim 14, further comprising providing means for measuring the mass flow rates of airborne conductive particles comprising:

measuring the volume of air flowing through the high E field sensing region of the cavity per unit time; and

measuring the average height of the signals outputted by the sensing means per unit time.

19. (Original) The method according to claim 17, further comprising providing means for displaying the count of signal outputted by said sensing means.

20. (Cancelled)

21. (Currently Amended) A method for detecting airborne conductive particles, comprising:

providing a resonant cavity having dimension wherein its height is greater than its width and having a high E field sensing region;

feeding power to the cavity;

directing an airborne particle through the high E field sensing region of the cavity using a suction device; ~~and~~

providing sensing means coupled to the cavity for sensing a drop in E field level caused by the particle and for outputting a signal representative thereof; and

displaying a histogram of the effective conductivity of airborne conductive particles comprising:

measuring the height of each signal outputted by the sensing means per unit time;

counting the number of signals of a given height outputted by the sensing means per unit time;

providing a memory storage register having an address number proportional to signal height;

storing the count in the memory storage register at the respective address number; and

displaying the count from each address number of the memory storage register as a function of address number.

22. (Original) The method according to claim 21, wherein said cavity has a resonant frequency and wherein said power supplied to said cavity is at an excitation frequency slightly higher than said resonant frequency.

23-25. (Cancelled)

26. (Previously Presented) The device of claim 1, wherein the suction device is operable to direct an aerosol distribution of the airborne conductive or dielectric particles, including the airborne particle.

27. (Previously Presented) The arrangement of claim 11, wherein the suction device is operable to direct an aerosol distribution of the airborne conductive particles, including the airborne particle.

28. (Previously Presented) The device of claim 12, wherein the suction device is operable to direct an aerosol distribution of the airborne conductive or dielectric particles, including the airborne particle.

29. (Previously Presented) The method of claim 14, wherein directing an airborne particle comprises directing an aerosol distribution of the airborne conductive or dielectric particles, including the airborne particle, through the high E field sensing region of the cavity using the suction device.

30. (Previously Presented) The method of claim 21, wherein directing an airborne particle comprises directing an aerosol distribution of the airborne conductive or dielectric particles, including the airborne particle, through the high E field sensing region of the cavity using the suction device.